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**CITY OF MANCHESTER**  
*Department of Public Works*  
*Environmental Protection Division*

November 20, 2015

Mr. Newton W. Tedder  
U.S. Environmental Protection Agency  
Region 1 - New England  
5 Post Office Square, Suite 100  
Mail Code: OES06-4  
Boston, MA 02109-3912

Subject: **City of Manchester – “Comments on Comments”**  
**2015 Draft New Hampshire Small MS4 General Permit**

Dear Mr. Tedder,

The City of Manchester is pleased to submit “comments on the comments” posted for the 2015 Draft New Hampshire Small MS4 General Permit. The City appreciated the opportunity to review and comment on the recently submitted comments by the MS4 communities and other interested parties as we work together to develop rational, reasonable, and cost effective regulations based upon sound science.

Below are our comments that pertain to comments that were submitted by the November 2<sup>nd</sup> deadline on sections 2.11, 2.2, 2.3.6, Appendix F, and Appendix H.

**CLF Comments** – CLF points out the need to clarify the language, “*EPA has not identified what, if any, new, newly interpreted, or revised water quality standard is being relied upon as the basis for EPA’s decision for EPA’s proposed modifications.*” This is a theme throughout many of the comments as clarity is paramount in implementation of the program.

CLF indicates a strong support for clear deadlines by which permittees must complete specified actions and opposes striking the §2.2.1(h). Deadlines need to be flexible as early permit holders are finding that there are many obstacles in locating structures. Easements need to be obtained to site baffle tanks, storm treatment systems and wet ponds when municipal lands are not always available. A few years of analysis of pond/lake data may be interpreted differently by stakeholders with competing interests, necessitating a third and fourth year study to verify or refute early weak trends. Then there are always the potential of legal battles where part of planned projects can come to a standstill until the dispute is resolved through the court process. It makes sense from a municipal standpoint to allow as much flexibility as possible to assure the project is done right rather than half-heartedly in a rush to meet a deadline.

CLF states, “*under no circumstances should deadlines extend beyond the five-year term of the permit*” with a footnote outlining that the 15 years is unacceptable. As outlined in Manchester’s previous comments, real-world application indicates that 15 years may not be enough time. Nutt Pond is a prime example how the best laid plans, implementation schedules, bidding, construction and maintenance extend well beyond five years.

Nutt Pond is the most accessible of Manchester’s TMDL ponds on a smaller scale than most. Manchester was required under a 1999 Consent Decree to begin a Supplemental, Environmental Pollution Projects (SEPP). This program required a formation of a committee of stakeholders, a review of the worse environmental conditions within the Manchester Community (riverbank erosion, delta sediments within ponds, nutrient pollutants within water bodies, classification of water bodies, impact by urban areas, type of recreational use for that specific water body, etc.). It took two years to classify and prioritize the projects, and then the higher priority project went into design, bidding, and construction. In Manchester the highest priority projects (Crystal Lake, Dorrs Pond, and the Piscataquog River bank erosion) projects began in 2003 (about 2 and ½ years after the order was given). The Phase I SEPP program was under a 10-year compliance program associated with the CSO, Long Term Control Program (LTCP).

Nutt Pond Projects were being designed and bid during the construction outlined in the paragraph above. Nutt Pond projects began in 2005 with forebays, reconfiguration and restoration of wetlands, inlet gates and structures and sediment removal. These projects were finished by the end of 2007. In the subsequent two-year review of the pond analytical data and the NHDES dropping the phosphorus compliance target from 15 ug/l to 12 ug/l, it was determined that Nutt Pond still did not meet the State’s Phosphorus TMDL.

A gravel wetland was the chosen response to move in the direction of phosphorus compliance. The design took a year and the project was ready for bidding and construction in 2011. An easement had to be obtained to site the wetland. It took three years to negotiate with the NHDOT to obtain this easement. The bidding and construction will happen over 2016. This is a full 17 years after the SEPP program began and the belief is that the pond will still not meet the water quality criteria for phosphorus.

More studies and easements will need to be obtained to construct additional treatment systems to assure a final compliance with the water quality limitations. When all is said and done this project will exceed a 20 year time table and will cost in excess of \$3 million dollars.

The new small MS4s will need to go through the same process Manchester has done over the past 17 years. As you can see it isn’t easy with one pond, let alone several ponds, streams and rivers. The implementation of the MS4 program will take several decades due primarily to funding, but most of all to conditions that are outlined above.

The CLF’s comments on New Development and Redevelopment take a stand on requiring the adoption and implementation of LID/green infrastructure. These are good avenues to initially control pollutants, but if not properly maintained, they return the pollutant back to the environment as vegetation and plants roots, and base-load groundwater increases in metals that were initially up taken by the vegetation. It will take years to turn resident and municipal mindsets around to look at capture of all their leaves and grass clippings, then finding a place for disposal.

To be fully effective the composting of leaves, grass clippings and plants will need to be in a controlled, covered environment with no chance for rain and runoff impacts. This will require large amounts of space for these types of operations and several hundreds of thousands of dollars to prepare the infrastructure. A yard with three mature oak trees that measures 70 ft. by 100 ft. generates upwards of 350 pounds of leaves (measured experiment done over the weekend of 11/07/2015). There has been no long term study of the fate of the nutrients and pollutants taken up by these methods.

In Manchester’s initial comments to the MS4 permit there is a discussion of metals captured by green roofs. If these roofs are not taken care of on an annual basis, the pollutants return back to the environment in a more concentrated manner due to vegetative degradation.

CLF also looks at application of this rule to areas as little as ½ acre. This can more than double the effort needed to cover 1 acre application. Again due to the lack of data associated with the fate of the vegetative nutrient transport it is too early to determine if this practice will have the long-term success that is attributed to it.

The CLF posts a foot note for continuous monitoring and adaptive controls (CMAC). CLF takes the position that the conversion of dry ponds to wet ponds must play a critical role in the reduction of stormwater and associated pollutants. As part of the CLF submittal, they include a paper by Quigley and Lefkowitz along with a power point presentation indicating this is the end all to stormwater pollution. The data indicates that these retrofits benefit nitrogen removal the most. Total Suspended Solids (TSS) reduction is more easily managed by forebays and Total Phosphorous (TP) removal is dismal at 14%.

The dry pond retrofit requires an actuated valve and level sensor built into the dry storage ponds. It requires a Wi-Fi type set-up to send real-time information.

Manchester has 17 flow measuring devices within the CSO structures along with three city-wide rain gages. It costs \$200,000 a year to maintain these structures and retrieve reports for the CSO LTCP. There are also numerous issues with these systems in cold weather.

Dry ponds converted to wet ponds will have similar issues, from poor to no operation of the actuated valves, problems with reporting of the actual volume treated due to the poor performance of the flow sensor. Exposure to sub-zero temperatures will play havoc with these systems unless they are completely removed after the growing season (November). This creates a maintenance nightmare with installation and removal for each system each year.

Dry ponds are installed to assure no water remains after 72 hours (the time it takes mosquito larvae to hatch). The retrofit example indicates that there are 270 hours of average retention time of discharge water in a wet pond, which can contribute to increased EEE and West Nile virus infections.

Dry ponds are also much better for trapping the first flush from the empty to full capacity than within a wet pond that already has water within.

There is an insistence that credit can be given for additional treatment from wet ponds that are available in dry ponds. It is much easier, more cost effective and less mechanically problematic to place a multi-port weir gate in a dry pond effluent end. This would be sized to the pond capacity where the lowest circular opening in the gate would be the smallest with the next being a little larger all the way to the top where the largest circular opening would be. This would allow the water to be retained longer in the pond, allow for more settling, have no mechanical parts and could be modeled dependent on system total rainfall and intensity. These are easily maintained and would serve as a restricted water discharge apparatus as the actuated gate does. It is way too early in the BMP process to tout these retrofitted wet ponds as the answer to stormwater pollution.

**City of Dover, NH Comments** – The City of Dover does make a good point about the methodology calculations outlined in Appendix H being consistent with those developed by the Seacoast PTAP group. It is important that consistency be carried through in all documents. As Manchester has witnessed, the CEI Watershed Restoration Plan for Nutt Pond, is significantly different from the AECOM TMDL development due to the different models used. This is confusing at best for the permittee.

**Sheehan, Phinney, Bass & Green Comments** – There were numerous legal comments submitted by this Law Firm on behalf of the MS4 communities. One of the main objections was the probabilistic analytical approach presuming all stormwater sources have the reasonable potential to violate water quality.

There is currently ‘clean metals’ analytical data for Manchester and Nashua, NH. Shortly there will be available data available from Lowell. The concentrations measured during sampling were between three and eight times less than

what was measured under non-clean conditions. The probabilistic approach needs to be reviewed using these higher accurate measurements to determine true WQ metals impairment.

Another avenue of exploration is the method to determine MS4 compliance with stormwater criteria. The same criteria is applied for MS4 permits (a dynamic condition) as is applied to NPDES permits (static condition). The maximum design flow from wastewater plants is calculated against the minimum weekly flow in the receiving body over a 10-year period. This gives you a straight forward calculation. With MS4 you have runoff only triggered by a rain event. It may be a minimum rainfall, a 2 year storm, 10 year, 25 year or even a 100 year event. Each storm moves through the pond or out to the river at a different rate.

The chronic criteria for copper is 2.9 ug/l. There are river gages along the major rivers that one can correlate rainfall to water level. If the river is at five times the 7Q10 why wouldn't the discharge from a culvert, swale or other direct discharge to that receiving body also receive a multiple of five for compliance for a discharge of 14.5 ug/l? A dynamic condition requires dynamic compliance measures.

This could be the same for ponds, lakes or other types of impoundments. If the flush rate for a pond is set at 10 flushes a year. And a measurable storm comes along that would double the flush rate during that event to mimic 20 flushes per year, why wouldn't the contaminant parameters be doubled to reflect the increased flush rate?

A sustained rain would increase the amount of contaminant to the pond, and then flush it below its starting point should the rain remained sustained. The time and location of the pond analysis could cause higher or lower readings than are actually available over the long-term mean. Some consideration needs to be given to these conditions to determine real-time compliance rather than probabilistic occurrences.

**City of Portsmouth, NH Comments** – Under item 2 Portsmouth states that, *“there appears to be no corresponding method to relieve the municipalities from unnecessary controls when waterbodies are delisted, determined no longer to be impaired, or determined to have improved during the term of the permit”*. As Manchester had indicated in its previous comments, when the contaminant concentration trends determine the WQ has reached the lowest threshold for compliance, then all ongoing activities are halted, and any compliance time-table suspended, until enough measurements can be taken to assure continued compliance, or that compliance hasn't been consistently met requiring the need to resume the task.

Also Manchester agrees with Portsmouth assessment that WQ impairments for solids do not exist within the designation of impairments. This terminology, if it is to be used, needs to be well defined. Examples of solids impairments given to have any substance for active compliance.

**City of Rochester, NH Comments** – The City of Manchester agrees with Rochester that a public hearing should be held to review the changed sections of the NH MS4 Permit.

Manchester does agree with Rochester that significant costs burdens will be placed upon the citizens. In the original comments Manchester provided on the MS4 there was a spreadsheet for costs for the StormTreat system. This system is the only system that captures solids via baffle tanks, uptakes nutrients and metals from stormwater and attenuates part of the flow. In review of the four TMDLs issued to Manchester and the acreage of the watersheds that surround these ponds, it was determined that the cost for enough treatment units to assure all water quality parameters are met would be between \$550 million and over \$700 million dollars dependent on the phosphorus limit that had to be met (12 ug/l to 15 ug/l). The argument is that phosphorus can be treated with less expensive means, but when the water quality limit for lead is 0.54 ug/l and the only time this was measured in the Merrimack River under 'clean sampling' conditions were in fact during times of rain. If it collects in the urban streets it will eventually be evident in the ponds and lakes and StormTreat is a very effective system to remove this contaminant. StormTreat meets the clause “maximum extent practicable” and “maximum extent feasible.” This is why a dynamic contaminant determination,

as the example given above, is needed otherwise there will be runaway costs that no municipality will be able to afford.

Under the Phase II program Manchester became a regulated MS4. In this program Manchester did enjoy the flexibility of prioritizing projects and has performed a good amount of the work on Nutt Pond, a portion of the work at Dorrs Pond with Stevens and Pine Island Pond work pending. These ponds have been in the program for 13 years and it may take another 13 or more to complete projects around each pond. This is the iterative approach as outlined in the Preamble to Phase II Stormwater Regulations, but will change drastically with this newly proposed MS4 with the hardened time schedules.

As Manchester alluded to in its comments we agree with Rochester's comments regarding waiving out of the extensive sampling requirement. Manchester looked at the amount of samples and the time that demonstrated compliance as excessive. However, the term "no measurable amount of nitrogen/phosphorus" in discharges is well beyond any expectation. If it meets the water quality standard it should be considered in compliance. There should also be consideration for dilution and flush rates as rainfall is a dynamic component.

Manchester agrees with Rochester's comments that *"Unlike Appendix H, Appendix F does not provide a mechanism to demonstrate that the MS4 discharges are not impacting receiving waters"*. Manchester did state that the 1,000 count limit in many cases is caused by water fowl or small wild animals that inhabit the banks of rivers and ponds. CSOs are the major contributor by far and are being addressed separately by LTCPs.

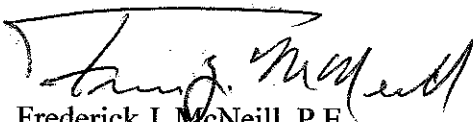
Contamination has been evidenced at swimming areas when parents change children's diapers and leave them next to the beach or river banks. Also, when children enter waters with fecal matters in their diapers this usually raises the e-coli counts. If there is an assurance that all of the illicit discharges have been controlled within a community, then e-coli contamination is beyond the control of any municipalities BMPs. These are individual instances that cannot be policed by the municipality in an ongoing fashion.

The Statewide Bacteria TMDL assumes that all waterbodies are impaired for bacteria. Manchester has demonstrated that in instances where contamination has been found, it was usually the result of fowl. The last true cross-connection causing fecal contamination was discovered over 10 years ago at a restaurant near the Hooksett town line. This was investigated, found and completely removed within two weeks. A few other hot spots have been investigated since then with results in the 1,000 to 3,000 range. The hot spot areas were followed back upstream of the hit location. The results got lower the further the upstream investigation went indicating fowl or warm-blooded animal contribution.

#### End of Comments

Thanks you again for the opportunity to comment on these important proposed stormwater regulations. If you have any questions, or require any additional information, please feel free to contact us at your convenience.

Sincerely,

  
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